

Notice of Allowability

Application No.

09/747,179

Applicant(s)

DESHAYES ET AL.

Examiner

Jacob F. Betit

Art Unit

2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the after final amendment filed 22-February-2005.

2. ☒ The allowed claim(s) is/are 9-18,27,29-34,41 and 43-48.

3. ☒ The drawings filed on 21 December 2000 are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.

(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20050314.

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____.


CHARLES RONES
PRIMARY EXAMINER

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DETAILED ACTION

Remarks

1. In response to communications filed on 22-February-2005, claims 9, 28, and 42 are amended and claims 1-8, 19-26, and 35-40 are cancelled per applicants' request.

2. In view of the examiner's amendment, authorized by the applicant's attorney, claims 10, 27, and 41 are amended, and claims 28 and 42 are canceled (details provided below). Claims 9-18, 27, 29-34, 41, and 43-48 are presently pending in the application.

Examiner's Amendment

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert Kevin Perkins on 15-March-2005.

The application has been amended as follows:

4. Replace claim 10 with the following:

10. (Previously ~~Amended~~ Presented) In a computer environment including at least one data storage area and at least one backup data storage system coupled to the at

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least one data storage area, the at least one backup storage system configured to execute at least two backup processes in parallel to backup target data stored in the at least one storage area, each backup process to back up a respective portion of the target data, an apparatus comprising:

at least one contention controller, coupled to the at least one backup storage system, that distributes the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data, wherein each backup process is capable of using the at least one resource, and wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes so as to reduce a contention for the at least one resource between the at least two backup processes and wherein the at least two backup processes include N backup processes, and wherein the at least one contention controller pre-assigns a first portion of the target data to a first backup process of the N backup processes, wherein the first portion is to be backed up during a first time period when the N backup processes are executed, and wherein the at least one contention controller makes at least one comparison of the contention for at least one first resource used to access the first portion between the first backup process and at least one other backup process of the N backup processes during a comparison time period that includes at least one guard band time period added to the first time period.

5. Replace claim 27 with the following:

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27. (Currently Amended) In a computer environment including at least one data storage area and at least one backup data storage system coupled to the at least one data storage area, the at least one backup storage system configured to execute at least two backup processes in parallel to backup target data stored in the at least one storage area, each backup process to back up a respective portion of the target data, a method comprising an act of:

a) distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data[-] wherein the at least two backup processes include N backup processes, and wherein the act a) includes acts of:

b) pre-assigning a first portion of the target data to a first backup process of the N backup processes, the first portion to be backed up during a first time period when the N backup processes are executed;

c) making at least one comparison of contention for at least one first resource used to access the first portion between the first backup process and at least one other backup process of the N backup processes during the first time period; and

d) generating at least one contention penalty for the first backup process based on the at least one comparison.

6. Replace claim 28 with the following:

28. (Canceled)

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7. Replace claim 41 with the following:

41. (Previously ~~Amended~~ Presented) A computer readable medium encoded with a program for execution on a computer in a computer environment including at least one data storage area and at least one backup data storage system coupled to the at least one data storage area, the at least one backup storage system configured to execute at least two backup processes in parallel to backup target data stored in the at least one storage area, each backup process to back up a respective portion of the target data, the program, when executed on the computer, performing a method comprising an act of:

a) distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data, wherein the at least two backup processes includes N backup processes, and wherein the act a) includes acts of:

b) pre-assigning a first portion of the target data to a first backup process of the N backup processes, the first portion to be backed up during a first time period when the N backup processes are executed;

c) making at least one comparison of contention for at least one first resource used to access the first portion between the first backup process and at least one other backup process of the N backup processes during the first time period; and

d) generating at least one contention penalty for the first backup process based on the at least one comparison.

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8. Replace claim 42 with the following:

42. (Canceled)

Allowance

9. Claims 9-18, 27, 29-34, 41, and 43-48 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art of record does not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim):

wherein the at least one contention controller makes at least one comparison of contention for at least one first resource used to access the first portion between the first backup process and at least one other backup process of the N backup processes during the first time period, and generates at least one contention penalty for the first backup process based on the at least one comparison, as claimed in claim 9.

Claims 11-18 are allowable over the prior art made of record because they are dependent from allowable claim 9.

The prior art of record does not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim):

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wherein the at least one contention controller makes the at least one comparison of the contention for the at least one first resource used to access the first portion between the first backup process and at least one other backup process of the N backup processes during a comparison time period that includes at least one guard band time period added to the first time period as claimed in claim 10.

The prior art of record does not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim):

c) making at least one comparison of contention for at least one first resource used to access the first portion between the first backup process and at least one other backup process of the N backup processes during the first time period; and

d) generating at least one contention penalty for the first backup process based on the at least one comparison, as claimed in claim 27.

Claims 29-34 are allowable over the prior art made of record because they are dependent from allowable claim 27.

The prior art of record does not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim):

c) making at least one comparison of contention for at least one first resource used to access the first portion between the first backup process and at least one other backup process of the N backup processes during the first time period; and

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d) generating at least one contention penalty for the first backup process based on the at least one comparison, as claimed in claim 41.

Claims 43-48 are allowable over the prior art made of record because they are dependent from allowable claim 41.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob F. Betit whose telephone number is (571) 272-4075. The examiner can normally be reached on Monday through Friday 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on (571) 272-4083. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jfb
15 Mar 2005



CHARLES RONES
PRIMARY EXAMINER